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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,309	10/06/2003	Mitsuc Miyazaki	160-391	4146
23117	7590	07/05/2006		
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER HORWAT, JENNIFER A	
			ART UNIT 3768	PAPER NUMBER

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No. 10/678,309	Applicant(s) MIYAZAKI ET AL.	
	Examiner Jennifer Horwat	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/6/03 5/12/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements filed on 10/6/2003 and 5/12/2005 are in compliance with 37 CFR 1.97-1.98 and all references therein have been considered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3-7 and 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "control the third gradient". There is insufficient antecedent basis for this limitation in the claim.

Claims 4-7 and 11-14 are indefinite in that the use of the term "the other" fails to particularly point out and distinctly claim the subject matter, as this term causes confusion as to which pulses are included under the scope of the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Licato, et al (US 7047062). Licato discloses an MRI system including an RF coil and gradient magnetic field coils (figure 1) as well as a pulse generator module (element 121) and a CPU (element 119) that controls the gradient magnetic field coils. The gradient magnetic field sequences may be “applied on any physical gradient axes Gx, Gy, Gz, or any linear combination thereof, depending on the selected orientation for the slice. The slice select pulse includes, but is not limited to, a slice select pulse, a rephaser pulse, and a killer or dephaser pulse”, the phase encoding pulse may be a phase encoding pulse or a phase rewinder pulse, and the readout pulse may be a rephaser pulse, a readout pulse, or a killer or dephaser pulse (col 6, lines 43-59). These pulses may be used for velocity or flow compensation (col 1, line 56).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Licato in view of Miyazaki, et al (2002/0032376).). Licato discloses an MRI system including an RF coil and gradient magnetic field coils (figure 1) as well as a pulse

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generator module (element 121) and a CPU (element 119) that controls the gradient magnetic field coils. The gradient magnetic field sequences may be “applied on any physical gradient axes Gx, Gy, Gz, or any linear combination thereof, depending on the selected orientation for the slice. The slice select pulse includes, but is not limited to, a slice select pulse, a rephaser pulse, and a killer or dephaser pulse”, the phase encoding pulse may be a phase encoding pulse or a phase rewinder pulse, and the readout pulse may be a prephaser pulse, a readout pulse, or a killer or dephaser pulse (col 6, lines 43-59). These pulses may be used for velocity or flow compensation (col 1, line 56).

Licato further discloses that the integral of gradient amplitude over the duration of the gradient pulse is an important factor in generation of a field pulse and should be a factor that is considered (col 1, lines 53-54). Licato discloses distinction between rephrase pulse and diphase pulse and selecting appropriate pulses to obtain desired results (col 5, lines 34-67).

However, Licato fails to disclose the use of a prep scan. Miyazaki discloses a system for MR imaging including the use of a prep scan to determine an optimal condition of imaging parameters (abstract). A prep scan is followed by an imaging scan (figure 2) and determines a condition of the pulses on the basis of the results of the scan, such as the timing of the scan and other imaging parameters (figure 6, step 21). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Licato in light of the teachings in the reference by Miyazaki to include a preparatory scan to obtain optimal parameters for the subsequent imaging scan to provide an improved image.

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Conclusion

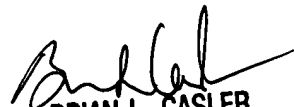
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Horwat whose telephone number is (571) 272-2811. The examiner can normally be reached on M-Th 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on (571) 272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jah
6/22/06


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